

MECHANISMS OF AGEING AND DEVELOPMENT

VOLUME CONTENTS

Volume 60 (1991)

Immune parameters in a population of institutionalized elderly subjects: influence of depressive disorders and endocrinological correlations C. Bartoloni, L. Guidi, D. Frasca, L. Antico, R. Pili, F. Cursi, A. Di Giovanni, C. Rumi, E. Menini, P. Carbonin, G. Doria and G. Gambassi (Rome, Italy)	1
Impairment of lymphocyte activities in depressed aged subjects L. Guidi, C. Bartoloni, D. Frasca, L. Antico, R. Pili, F. Cursi, E. Tempesta, C. Rumi, E. Menini, P. Carbonin, G. Doria and G. Gambassi (Rome, Italy)	13
Calcium 'homeostatic' effect of $1\alpha,25$ -dihydroxycholecalciferol on young adult mouse calvaria in organ culture P. Goldhaber and L. Rabadjija (Boston, MA)	25
No relationship between the age-related decrease in prostacyclin production and the level of intracellular lipid peroxidation in human umbilical vein endothelial cells in culture N. Hasegawa and K. Yamamoto (Tokyo, Japan)	35
Muscle fiber branching — difference between grafts in old and young rats M. Blaivas and B.M. Carlson (Ann Arbor, MI)	43
Synthesis of insulin-dependent activator of hepatocyte plasmatic membrane Na,K-ATPase decreases in aging V.V. Frolik and A.L. Shkopenko (Kiev, U.S.S.R.)	55
Effect of aging and other factors on monocyte aryl hydrocarbon hydroxylase activity A.D. Putnam and T.C. Peterson (Halifax, Canada)	61
Hepatic drug metabolism during development in food-restricted female Sprague-Dawley rats J. Lemay, M. Audet, I.M. Yousef and B. Tuchweber (Montreal, Canada)	75
Growth retardation in senescent arterial smooth muscle cells and its reversal following brain stimulation: implications for atherosclerosis W.H. Gutstein, C.-H. Wang, J.M. Wu, J. Ore, Y.-N. Cui and M.-K. Lee (Valhalla, NY)	89
Mathematical modeling for the aging process: normal, abnormal and self-terminating phenomena in spatio-temporal organization M. Murase and M. Matsuo (Tokyo, Japan)	99

Age-associated changes in neuroaxonal transport in the hypothalamo-neurohypophyseal system of the mouse A.P. Fotheringham, Y.S. Davidson, I. Davies and J.A. Morris (Manchester, U.K.)	113
Longitudinal Gompertzian analysis of breast cancer mortality in the U.S., 1962-1987: demonstration of a disorder displaying complex deterministic mortality dynamics J.E. Riggs (Morgantown, WV)	123
Chronic hypoxia increases β -adrenergic receptor density in the lungs of young and old rats D.J. Birnkrant, S.L. Mader, E. Van Lunteren and P.B. Davis	135
Age-related differences in promoter-induced extension of in vitro proliferative life span of Syrian Hamster fibroblasts S.F. Deamond and S.A. Bruce (Baltimore, MD)	143
A study on the basic nature of human biological aging processes based upon a hierarchical factor solution of the age-related physiological variables E. Nakamura (Kyoto, Japan)	153
Comparison of rates of neuronal development and survival in human and rat cerebral cortical cell cultures M.P. Mattson and B. Rychlik (Lexington, KY)	171
Hydrogen peroxide production by mitochondria may be a biomarker of aging R.S. Sohal (Dallas, TX)	189
Skeletal muscle atrophy in old rats: Differential changes in the three fiber types J.O. Holloszy, M. Chen, G.D. Cartee and J.C. Young	199
Alterations in β -adrenergic and muscarinic receptors in aged rat heart. Effects of chronic administration of propranolol and atropine B. Chevalier, P. Mansier, E. Teiger, F. Callens-El Amrani and B. Swynghedauw (Paris, France)	215
Longitudinal Gompertzian analysis of primary malignant brain tumor mortality in the U.S., 1962-1987: rising mortality in the elderly is the natural consequence of competitive deterministic dynamics Jack E. Riggs (Morgantown, WV)	225
Longitudinal Gompertzian analysis of prostate cancer mortality in the U.S., 1962-1987: a method of demonstrating relative environmental, genetic and competitive influences upon mortality J.E. Riggs (Morgantown, WV)	243
Decreased density of beta-adrenergic and muscarinic cholinergic receptor sites in the vasa nervorum of aged rats D. Zacco, M. De Michele, M. Mancini and F. Amenta (Genova and Roma, Italy)	255
Effect of lard, palm and rapeseed oils life conservation in aged mice ... H. Suzuki, M. Yamazaki, S. Arai, A. Nagao and J. Terao (Ibaraki and Iwate, Japan)	267

	323
Changes in the rat liver mitochondrial DNA upon aging	275
K. Asano, S. Amagase, E.T. Matsuura and H. Yamagishi (Kyoto and Osaka, Japan)	
Cytochrome <i>c</i> mRNA levels decrease in senescent rat heart	285
R.B. Biggs, R.M. Hanley, P.R. Morrison and F.W. Booth (Houston, TX)	
Mitochondrial theory of senescence: respiratory chain protein studies in human skeletal muscle	295
E. Byrne, I. Trounce and X. Dennett (Melbourne, Australia)	
Aging: stimulation rate on cardiac intracellular Na^+ activity and developed tension	303
S. Ruch, W.-B. Im, R.H. Kennedy, E. Seifen and T. Akera (Little Rock, AR and Tokyo, Japan)	
Author Index	315
Subject Index	317
Volume Contents	321